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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/724,741 | 12/02/2003 | Jyh-Rong Sheu | SHUE3019/EM | 2096 |
| 23364 | 7590 | 03/24/2005 | EXAMINER | |
| BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314 | | | | PATEL, ASHOK |
| | | ART UNIT | | PAPER NUMBER |
| | | 2879 | | |

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|----------------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/724,741 | SHEU ET AL. <i>(SM)</i> |
| | Examiner | Art Unit |
| | Ashok Patel | 2879 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-9 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 02 December 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

1. Figures 3A, 3B and 3C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The disclosure is objected to because of the following informalities: at page 8, last line: the term A should be changed to --4A--.

In claim 3, lines 2-3: the language "cathode electrode consists of a plurality of cathode plates" appears to be inconsistent with that of the specification and drawings. The Examiner is of opinion that the language should be rather --said plurality of cathode plates comprises a cathode electrode--because it is the plural cathode plates (as mentioned earlier) that define (or are being referred to as) a cathode electrode.

In claim 4: the term "gate and emitter" should be corrected to --gates and emitters-- to maintain consistency of terminology.

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In claim 6, line 2: the term "type" should be corrected to --shaped-- in order to maintain consistency of terminologies used in parent claim.

In claim 9, last line: the term "emit-able" to should be changed to -emitting--.

Appropriate correction or response is required.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not disclose the electron emitters made of any emit-able material as, recited in claim 9. The term "any" of claim 9 refers anything that may not be supported by the specification. The Examiner proposes to change the term "any" to --an--.

5. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, last two lines: the terms "the surface of the cathode plates" and "the sides of the gates" lacks antecedent basis. These terms are not defined earlier in the claim. It is unclear as to which surface of the cathode plates and which sides of the gates are being referred to.

In claim 2, the terms "the direction of said gates" and "the direction of said cathode plates" lack antecedent basis lacks antecedent basis. The parent claim does not define these terms. It is unclear as to which direction of the gates are being referred to and which direction of the cathode plates are being referred to.

Claims 3-9 are necessarily rejected since they depend upon claim 1.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

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invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-5, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al (USPN 6,617,798).

Lee et al disclose applicant's claimed carbon nano tube field emission display (Figs. 1-4) having strip shaped gate: a substrate (41); a plurality of cathode plates (42) formed on the substrate; a dielectric layer (a capsule shaped shaded element) located on element 42, as shown in Fig. 2); an anode plate (50) provided substantially parallel and at a distant from the cathode plate; and inherently including a light emitting element (in view of the term "field emission display device disclosed at col. 1, the Field of Invention) made of light-emitting light-emitting materials formed on a surface of the anode plate (50) opposing the cathode plates; wherein a plurality of strip shaped gates (45 or 47 or 48) and the cathode plates (42) are substantially perpendicular to one another across the dielectric layer, and pluralities of electrons of electron emitters (43) induced from the surface of the cathode plates by the electric force formed by the sides of the gates.

As to claim 2, Lee et al disclose in Figs. 2-4, the direction of the gates being substantially perpendicular to the direction of the cathode plates.

As to claim 3, Lee et al disclose in Figs. 2-4, a cathode electrode (as a whole) including the plurality of cathode plates.

As to claim 4: applicant is reciting process steps in the product claim, rendering the claim as product-by-process type. The courts have been holding that: "--In spite of the fact that a product-by-process claim may recite only process limitations, it is the product which is covered by the claim and not the recited process steps--. (In re Hughes, 182 USPQ 106)---". Also --Patentability of a claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. (In re Pilkington, 162 USPQ 147)---." Accordingly, "--a rejection based on 35 U.S.C. section 102 or alternatively on 35 U.S.C. section 103 of the statute is eminently fair and acceptable." (In re Brown and Saffer, 173 USPQ 685 and 688). --The determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made--. In re Thrope, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). As such, no patentable weight is given to process steps recited in claim 4.

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As to claim 5, Lee et al disclose the gate electrodes including top and bottom elements, which would induce the electrons emitted from the electron emitters.

As to claims 8 and 9, Lee et al disclose the electron emitters made of carbon nano tube (col. 1, Field of Invention, col. 2, lines 60-62), which is emitting material, as claimed by applicant.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al, as applied to claim 1.

Lee et al do not disclose the electron emitters being induced only from one side of the stripes type gate, as claimed by applicant. However, as shown in Figures 2-4 of Lee et al's

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disclose, it is clear that induction of the emitted electrons could be carried out by applying suitable voltage source to either one side (either top or bottom side) of the stripe shaped gate electrode or both sides (top and bottom sides) of the stripe shaped gate electrode, since it depends upon choice and suitability of application. Consequently, Lee et al would also suggest to one of ordinary skill in the art to apply suitable voltage source to either one (top or bottom) side of the stripe shaped gate electrode for inducing the emitted electrons.

As to claim 7, although the anode plate is not explicitly disclosed as substantially symmetrical with the cathode plate, Lee et al clearly teach, through the prior art Figure 1, the light-emitting layer of the anode plate being substantially symmetrical with the cathode plates. This known symmetric configuration would help prevent any cross-talk phenomenon since the electrons emitted from the corresponding cathode plate (thru the gate electrode) does not reach nearly adjacent area of the anode.

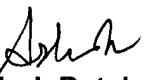
Therefore, it would have been obvious to one of ordinary skill in the art to modify Lee et al's nano tube field emission display including symmetric anode plate and cathode plates for preventing any cross-talk.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Martinez, Lee and Van Der Vaart et al each are cited for showing a general structure of a a nano tube foeld emission display device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Patel whose telephone number is 571-272-2456. The examiner can normally be reached on Monday-Thursday.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ashok Patel
Primary Examiner
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